

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference XA1796	FOR FURTHER ACTION	See item 4 below
International application No. PCT/GB2004/005062	International filing date (<i>day/month/year</i>) 02 December 2004 (02.12.2004)	Priority date (<i>day/month/year</i>) 05 December 2003 (05.12.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant SELEX SENSORS AND AIRBORNE SYSTEMS LIMITED		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).
2. This REPORT consists of a total of 7 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input checked="" type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 07 June 2006 (07.06.2006)
Facsimile No. +41 22 740 14 35	Authorized officer <div style="text-align: center; font-weight: bold; margin: 10px 0;">Nora Lindner</div> Telephone No. +41 22 338 89 65

PATENT COOPERATION TREATY

REC'D 08 JUN 2005

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From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/GB2004/005062

International filing date (day/month/year)
02.12.2004

Priority date (day/month/year)
05.12.2003

International Patent Classification (IPC) or both national classification and IPC
H04N3/15, H04N5/225, H01L27/146, H01L27/148

Applicant
BAE SYSTEMS PLC

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2004/005062

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2004/005062

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	10,13-18
	No: Claims	1-9,11,12
Inventive step (IS)	Yes: Claims	14
	No: Claims	1-13,15-18
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: EP-A-1 089 342 (INTERUNIVERSITAIRE MICROELEKTR ; AITEK (IT)) 4 April 2001 (2001-04-04)
- D2: US-A-4 574 311 (RESNIKOFF ET AL) 4 March 1986 (1986-03-04)
- D3: US-A-6 072 529 (MUTZE ULRICH) 6 June 2000 (2000-06-06)
- D4: US-B1-6 650 704 (CARLSON RANDOLPH S ET AL) 18 November 2003 (2003-11-18)

1 Novelty (Article 33(2) PCT)

- 1.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claims 1 - 4, 8, 11 and 12** is not new in the sense of Article 33(2) PCT.

Document **D1** discloses (the references in parentheses applying to this document):

A pixelated detector comprising an array of sensing pixels for generating an image signal, wherein the outlines of at least two pixels in the array are different (cf. fig. 17: the curves of the sensor elements change from the inner to the outer concentric closed rings; and par. 45: "this sensor element completely fills the location site").

D1 further discloses that:

the outlines of at least two of the pixels enclose different areas (cf. fig. 17: each sensor element encloses a different area);

the outlines of at least two of the pixels are non-circular and show rotation with respect to one another (cf. fig. 17: the curved sensor elements of the same ring are rotated with respect to one another);

the outlines of at least two of the pixels have different shapes (cf. fig. 17: one

circular sensor element in the center and a plurality of equally spaced sensor elements in the concentric rings, wherein the curves of the sensor elements change from the inner to the outer rings);

the outlines of at least two of the pixels do not fill a tessellation grid (cf. fig. 16: the circular sensor elements form a fragmentary grid); and

the outlines of the pixels have different dimensions in at least two directions of their distribution (cf. fig. 17: the sensor elements have long curved and short straight sides);

The subject-matter of the independent **claim 1** and its dependent **claims 2, 3, 4, 8, 11 and 12** is therefore not new (Article 33(2) PCT).

1.2 Claim 1 is also not new vis-à-vis the teaching of document D2. Document **D2** discloses:

A pixelated detector comprising an array of sensing pixels for generating an image signal, wherein the outlines of at least two pixels in the array are different (cf. fig. 8: pixels 60 have different outlines).

D2 further discloses that:

at least one pixel has an irregular outline which shows no symmetry (cf. fig. 10: pixels 60 have different irregular non-symmetric outlines) and which is jittered (cf. fig. 8: the distribution of the pixels follows a curved path);

the outlines of at least two of the pixels do not fill a tessellation grid (cf. fig. 11: pixels 60 form a fragmentary grid), wherein the outlines of at least three pixels are irregularly spaced from one another (cf. fig. 11: the barycenters (x,y) of the sensors 60 are distributed in a non-periodic arrangement);

The subject-matter of the dependent **claims 5 - 9** is therefore not new (Article 33(2) PCT).

2 Inventive step (Article 33(3) PCT)

2.1 A motion control apparatus for producing controlled motion of the detector relative

to an object is a matter of normal design procedure, see for example document **D3**. Its inclusion in the pixelated detector described in document **D1** would therefore be an obvious design possibility for the skilled person.
Hence **claim 10** cannot be regarded as involving an inventive step (Article 33(3) PCT).

- 2.2 A pixelated detector and a method of producing a digital representation of an object by processing a first and a second series of output signals as stated in claims 17 and 18 is a matter of normal design procedure and common practice in the field of image processing (cf. i.e. document **D4**). It would therefore be obvious to a person skilled in the art to include this feature in a pixelated detector in order to take advantage of the different outlines of the different respective pixels.
Hence **claims 17 and 18** cannot be regarded as involving an inventive step (Article 33(3) PCT).
- 2.3 Dependent **claims 13, 15 and 16** do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step.

Re Item VII

Certain defects in the international application

As described on page 14 line 13, there are black portions indicating holes where the pixels do not fit. However, these black portion can not be found in fig. 7 contrary to what is stated in the description. There seems to be a numbering fault of the reference numbers.